



E-LEARNING: A TOOL FOR THE IMPROVEMENT OF MATHEMATICS LEARNING

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Abstract:

In the Present era, technology is one of the essential parts of our livelihood. The education system had advanced through the proper use of technology. ICT directly influences the development of the teaching-learning process. E-learning may define as learning that is enabled electronically. This paper aims to discuss different issues related to E-learning in the Indian secondary school education system and survey the opinions of different secondary school teachers regarding the effect of e-learning on mathematics learning.

Keywords: E-Learning, Secondary education.

Introduction:

The teaching-learning process is a dynamic process. The advancement of the teaching-learning systems is possible due to the rapid progress in technology and, it is now embraced by the masses. The introduction of computers was the basis of this revolution. Nowadays teaching can be based in or out of the classrooms, the use of computers and the Internet forms. The learning process based on normal mode teaching but with the help of electronic resources is known as E-learning. It is a purposeful use of information and communication technology. E-learning can also be termed as a network-enabled transfer of skills and knowledge, and education is delivered to many recipients at the same or different times. Bakker (2004) investigated that technology plays an important role and believes this is a meaningful and promising approach. Today E-Learning is mostly delivered through the internet, although in the past it was delivered using a blend of computer-based methods like CD-ROM. Wenger (1998) suggested that Digital technology in such an enterprise act on two levels: first, professional development concerns its use in mathematics education, and second, digital technology may support the community's work by offering online and virtual facilities for exchange. Wijers, Jonker, and Drijvers (2010) Enhancing student engagement is an important educational game potential. There has been the development and growth of many software and courses that can and have been used to individualize student learning (Bowen & Ithaka, 2012; Mihai, Stanciu, & Aleca, 2011). For instance, in an experimental study of 228 university students, Xu et al. (2014) found that personalized virtual online learning environments improved students' exam performance, satisfaction, and self-efficacy compared to non-personalized virtual learning environments.



Characteristics of e-Learning

The characteristics of e-Learning are discussed are:

- It is restricted to online learning, undertaken by the internet or web-enabled technology.
- It is confined to learning undertaken, facilitated, and supported via Web-based instructions and Internet-based communication.
- Created with the help of subject matter experts.
- Each content is created with one or more learning objectives.
- Content speaks directly to the learner as an individual
- Provides opportunities for learners to relate content to their role or personal situation through thought-provoking self-reflective learning.
- Easy to use and enables learners to take control and find what they need quickly.
- Connects through multi-sensory interaction.
- Materials of the content include relevant, relatable, real-life scenarios.
- Enables personalization.
- Responds to individual needs.
- Provides self-reflection opportunities.
- Encourage self-learning.

Types and Forms of e-Learning

There are three main types of e-Learning: (i)Text Driven, (ii) Interactive, and (iii) Simulation. The text-driven material is very helpful for the preparation of the examination of the learner. In an interactive e-learning course, interactive components can be found that enhance the value of learning and clear the concepts of the topic. It may or may not include graphics, charts, diagrams, videos, etc. Simulation is a highly interactive kind of e-learning, including graphics, video, audio, and games. Simulation very much influences the learning of science and mathematics teaching. E-learning eventuates in many forms and at times is the blend of the following:

- Completely online learning
- Blended Learning
- Synchronous- the provider and receiver communication happens directly as in chat rooms, or video-audio conferencing.
- Asynchronous- The information is passed through forums, emails, wikis, etc
- Self-study

Advantages of e-Learning in Mathematics learning:

Mathematics is a conceptual subject. Learning mathematics needs the individual attention of the teacher. Drill work and revision work is essential for learning each student's mathematics. The advantages of e-Learning in mathematics learning are discussed below:

- It suits everyone's needs, anyone can have access to information, at their own pace and own time.



- Students can have access to the mathematics content any number of times, required during revision while preparing for exams.
- It helps self-study, the students can do practice work and get immediate feedback.
- It enables quick delivery of lessons as the lessons start quickly and are summed up in a single lecture, and the learners can determine their own speed of learning.
- It saves time for the students; they don't need to travel to the institution.
- It tends to enable the teachers to reach millions of students in one go and communicate the message to the target audience. Moreover, all the students get the same training at the same time.
- It is cost-effective, in the sense that people don't need to spend more on traveling, course material, accommodation, and trainers.
- This mode of learning is a paperless way of learning which protects the environment to a great extent.

Disadvantages of e-Learning in Mathematics learning:

E-learning may be a tool for mathematics learning in school education if everyone can access internet service at their own pace. Limited students can access the internet facilities in our country. So, it is our far dream to get the advantage of this tool in mathematics learning. There are some disadvantages to e-learning at the school level of education.

- If students access e-learning as a tool, they cannot share their problems, and feelings with their elders, friends and lead to social isolation.
- It requires learners' strong self-motivation and time management skills, which have a lack in our learners.
- Lack of communicational skill development in online students.
- Often lacks meaningful feedback to mislead the students.
- Makes it hard to monitor for plagiarism or cheating.

Survey the opinions of different secondary school teachers regarding the effect of e-learning as a tool of mathematics learning:

A study was conducted on the opinions of different secondary school teachers regarding the effect of e-learning as a tool for mathematics learning.

Sample of the study: 34 Mathematics Teachers of different schools in Hooghly and Bardhaman in West Bengal, India.

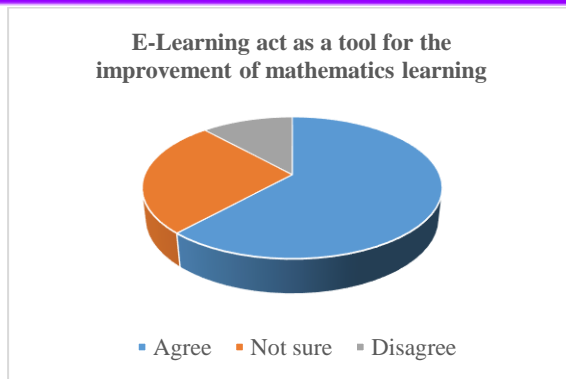
Method of Sampling: Purposive

Tool of the study: An open-ended opinionnaire was constructed for this purpose.

Analysis of the study:

The researcher found that,

- (i) About 62% of the total respondents agree that e-learning may act as a tool for the improvement of mathematics learning at the secondary level, but this technology cannot effort most of the students in our country.



- (ii) Respondents cited different advantages of e-learning in secondary-level mathematics learning in their locality. The table given below shows the different advantages of e-learning in secondary-level mathematics learning.
- ✓ Possibility for students to make use of self-paced learning.
 - ✓ Students can choose their learning environments.
 - ✓ It removes geographical obstacles.
 - ✓ Cost-effective and cost-efficient.
 - ✓ Students can do drill work regularly.
 - ✓ They can access expert teacher's classes.
 - ✓ They can do better revisions for examinations.
 - ✓ It encourages self-learning.
- (iii) Respondents also identified different barriers given below to e-learning in secondary-level mathematics learning in general:
- Lack of communication skill development in online students.
 - Students do not have access to internet service so they cannot be able to achieve the benefits of e-learning.
 - Most of the studied e-learning materials are written in English, which is very much a problem for Bengali medium students.
 - It increases the differences among the students as all students have not got the opportunity of e-learning access.
 - If students are not responsible and motivated toward their learning this system is working for them.
 - It is expensive for most of the students.

Limitations:

The delimitations for the present study are:

- a) A very small sample of respondents has been involved.
- b) Only purposive sampling is used in the study.
- c) The study is done only for the schoolteacher community.



Conclusion:

E-learning already has numerous uses in education, and its future role in education will most likely be immense. There's no doubt that we are at the beginning of a new era in education. At the end of the study, it can conclude that most of the teachers agreed that e-learning is an effective tool for the improvement of effective mathematics learning at the secondary level. They also identify some barriers to this system. If our country will digitally be connected, then learners will be benefitted and they will use e-learning as a tool for their improvement of mathematics learning.

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